ORD CLEARANCE FORM

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Organization:	ord, nerl, emmd	☒ Requires Advance Notification
		☐ Does not Require Advance Notification

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Middle Initial:		EPA Publication Number	
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Phone #:		Records Schedule Selection	Not A Senior Official

Product Title

Contemporary and Temporal Investigation of Per- and Polyfluorinated Compounds in Cape Fear River, North Carolina Surface Water Samples.

Author(s), Affiliation, and Address

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Percentage Contribution %:	Percentage Contribution %:

Impact / Purpose Statement

Note: The Impact / Purpose Statement information for this work product will be displayed on the additional pages.

Product Description / Abstract

Note: All Product Description / Abstract information for this work product will be displayed on the additional pages.

Tracking and Planning

Note: All Tracking and Planning Field data for this work product will be displayed on the additional pages.

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☐ EPA Only ☒ Public	☐ Yes (Permission Attached) ☐ No ☒ Not Applicable		
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QAPP Reference			
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Keywords	
1. non-targeted analyses	4. temporal investigation
2. suspect screening of chemicals	5.
3. biological samples	6.

Comments

Note: All Comments for this work product will be displayed on the additional pages.

Digital Signatures (As applicable)	
Technical Information Manager: Jan Contreras	Date Approved: 06/07/2017
Level 1 Approver: Myriam Medina-Vera	Date Approved: 06/08/2017
Level 2 Approver: Kevin Oshima	Date Approved: 06/12/2017
Level 3 Approver:	Date Approved:
Level 4 Approver:	Date Approved:
Level 5 Approver:	Date Approved:
Level 6 Approver:	Date Approved:
Level 7 Approver:	Date Approved:
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Tracking and Planning

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Task: Improving the Scientific Foundation of Regulatory Decisions

Product Title: N/A - Not Applicable

Product Description: N/A - Not Applicable

Project: Current Water Systems and Regulatory Support

Topic: Water Systems

Research Program Area: Safe and Sustainable Water Resources

Impact / Purpose Statement

This will be an oral presentation

Product Description / Abstract

Recent regulatory pressure has altered the chemistry of per- and polyfluorinated compounds being manufactured and used in industrial and consumer applications. Many manufacturers have been moving toward the production of shorter chain per- and polyfluorinated compounds. A series of polyfluorinated compounds that contain central ether oxygens have been recently documented in the peer reviewed literature to be present in the Cape Fear river, NC in both surface and drinking water samples. Non-targeted analysis of water samples using high resolution mass spectrometry (HRMS) LC/MSD TOF was used in the past to identify novel polyfluorinated compounds. Contemporary samples were collected recently to: 1) confirm the presence of previously identified chemicals 2) investigate novel chemicals present 3) analyze via TOFMS and QTOFMS for platform cross validation 4) retroactively investigate samples from over 5 years past. Contemporary TOFMS/QTOFMS analysis revealed the presence of a series of polyfluorinated ether sulfonic acids that were previously undescribed. Precursor compounds were selected from a list of molecular features (accurate mass, retention time, abundance) that were unknown. QTOFMS data dependent analysis (DDA) was performed on select precursors to generate fragmentation spectra. One advantage of HRMS and proper data banking is retrospective investigation of past samples. This presentation will focus on TOF/QTOF based analytical approaches used to identify novel chemicals species and temporal occurrence of detected compounds.

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Comments

Author: Jan Contreras Date: 06/07/2017 11:13 AM

This will be an oral presentation

Author: Myriam Medina-Vera Date: 06/08/2017 3:21 PM

The abstract submission was discussed with the Division Director, Tim Buckley, Kevin Oshima, EMMD science associate, the PI and the BC on June 8, 2017.

Author: Kevin Oshima Date: 06/12/2017 9:10 AM

Prior to presenting, a courtesy copy should be shared with the Region and OW and other appropriate stakeholders.